CLAIMS

We Claim:

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1. A method for spreading the electromagnetic emissions of a generated clock that is created in response to a reference clock signal, the method comprising the steps of:

providing an adjustable delay line having a plurality of selectable delay trim units in the path of the reference clock signal;

enabling a first set of delay trim units in the adjustable delay line during a first clock period, thereby causing the generated clock signal to exhibit a first clock period;

enabling a second set of delay trim units in the adjustable delay line during a second clock period, thereby causing the generated clock signal to exhibit a second clock period, wherein the second clock period is less than the first clock period; and

enabling a third set of delay trim units in the adjustable delay line during a third clock period, thereby causing the generated clock signal to exhibit a third clock period, wherein the third clock period is greater than the first clock period.

2. The method of Claim 1, further comprising the steps of:

enabling a fourth set of delay trim units in the adjustable delay line during a fourth clock period, thereby causing the generated clock signal to exhibit a fourth clock period, wherein the fourth clock period is less than the second clock period; and

enabling a fifth set of delay trim units in the adjustable delay line during a fifth clock period, thereby causing the generated clock signal to exhibit a fifth clock period, wherein the fifth clock period is greater than the third clock period.

3. The method of Claim 1, wherein a difference between the first clock period and the second clock period is about 50 picoseconds or more.

4. The method of Claim 3, wherein a difference between the first clock period and the third clock period is about 50 picoseconds or more.

5. The method of Claim 1, further comprising the step of adjusting the delay trim units in the adjustable delay line in a predetermined pattern.

6. The method of Claim 1, further comprising the step of generating an overflow signal if the delay trim units enabled in the adjustable delay line reach a predetermined level.

7. A method for spreading the electromagnetic emissions of a generated clock that is created in response to a reference clock signal, the method comprising the steps of:

providing an adjustable delay line having a plurality of selectable delay trim units in the path of the reference clock signal;

generating a first control signal for enabling a first set of delay trim units in the adjustable delay line, the first set of delay trim units being selected to provide a generated clock signal having a base clock period;

generating a second control signal for adjusting the first set of delay trim units, the second control signal being selected to vary in a predetermined pattern;

combining the first control signal and the second control signal to create a third control signal;

providing the third control signal to the adjustable delay line, wherein the third control signal causes different sets of delay trim units to be enabled during different cycles of the reference clock signal, thereby causing the generated clock signal to exhibit a pattern of varying clock periods, wherein the pattern of clock periods includes the base clock period, as well as clock periods greater than and less than the base clock period.

8. A method for spreading the electromagnetic emissions of a generated clock signal that is created in response to a reference clock signal, the method comprising the steps of:

providing a delay line in the path of the reference clock signal; and

adjusting the trim units in the delay line in a pre-determined pattern during consecutive clock cycles.

9. The method of Claim 8, further comprising the step of providing an offset in the reference clock signal prior to the step of adjusting.

10. The method of Claim 9, wherein the step of providing an offset comprises providing a trim unit adjustment of +2 prior to starting the pattern and wherein the pattern comprises providing trim unit adjustments of +1, +2, 0, +2, -1, +2, -2, +2 and +2 during nine consecutive clock cycles.

11. The method of Claim 8, wherein the pattern comprises providing trim unit adjustments of -1, 0, -2, 0, -3, 0, -4, 0 and 0 during nine consecutive clock cycles.

12. The method of Claim 8, wherein the pattern comprises providing trim unit adjustments of -1, 0 and 0 during three consecutive clock cycles.

13. The method of Claim 8, wherein the pattern comprises providing trim unit adjustments of -1, 0, -2, 0 and 0 during five consecutive clock cycles.

14. The method of Claim 9, wherein the step of providing an offset comprises providing a trim unit adjustment of +1 prior to starting the pattern, and wherein the pattern comprises providing trim unit adjustments of 0, +1, -1, +1 and +1 during five consecutive clock cycles.

15. The method of Claim 8, wherein the pattern comprises providing trim unit adjustments of -1, 0, -2, 0, -3, 0 and 0 during seven consecutive clock cycles.

16. The method of Claim 9, wherein the step of providing an offset comprises providing a trim unit adjustment of +1 prior to starting the pattern, wherein the pattern comprises providing trim unit adjustments of 0, +1, -1, +1, -2, +1 and +1 during seven consecutive clock cycles.

17. The method of Claim 8, wherein the clock signal exhibits different frequencies during successive cycles, the energy of the clock signal being spread equally over the different frequencies.

18. The method of Claim 9, wherein the offset is selected to minimize the worst-case skew introduced between the reference clock signal and the generated clock signal.